Traffic & Transportation Issues

2012 to 2045

FOR DISCUSSION PURPOSES ONLY

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BUREAU OF STATISTICS

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Traffic & Transportation Issues

The general growth of the population, nationally as well as provincially, will require increases in the transportation of goods and people, which means increased traffic of all types. This will bring more frequent flights or bigger planes (perhaps another new air terminal), also taller trains and longer buses and trucks as we're already seeing. In addition, there are some profound questions to entertain about Manitoba's transportation future.

Will Manitoba host an airship company to service remote locations? With the prospect of a longer shipping season, what will be the status of the Port of Churchill ten, twenty and thirty years from now? And what of autonomous cars? Manitoba Public Insurance (MPI) 2014 Annual Report specifies "Vehicles with urban autopilot could be on the road" by 2022, and by 2025 "fully autonomous vehicles could be on the road".

What changes will autonomous vehicles bring? Will there be special roads or lanes built? Of course, the expectation is that they will increase road safety; otherwise it's a road that we shouldn't go down. Will we send our kids to hockey or dance class alone with the robotic car? Will we send the same car out for a late night pizza, or will take-out service be delivered by drones like any other small parcel?

Getting back to demographic change, MBS projects a 41% increase in the driving age population (16+) between 2015 and 2045, and a 20% increase in just the next 15 years. All this growth will certainly require more housing, more roads, and more cars. But of these three, the one that will lag the most is roads.

There will be new roads within new subdivisions, perhaps even in the space currently occupied by Winnipeg's North End rail yard, but not likely a great increase in roads between places. Those are largely already built. Instead we'll see improvements in carrying capacity, such as more lanes, and other efficiencies like high-speed city routes, and cloverleaves replacing traffic lights (as we're already seeing). Still with the expected increase in drivers, and a corresponding increase in motor vehicles, there will on average be greater traffic density on our roads.

This may be alleviated to some extent (maybe even greatly) by significant increases in 1) public transportation 2) active transportation, and 3) e-commuting; all more affordable and more environmentally friendly practices. But the projections presented here are based on today's reality.

MBS estimates the population of Manitoba aged 16+ in 2014 was 1.04 million. According to the 2014 MPI Traffic Collision Statistics Report, this figure corresponds with 869,239 Licenced Drivers (83.5% of the 16+ population) and 1.03 million registered vehicles (1.2 vehicles per driver).

With the expectation that individuals will continue to drive at today's rates, the result is greater vehicle density on our roads; and if not for the aging of the population, this would also predict more traffic collisions per licensed driver. But, while we project total traffic collisions to increase over the coming decades, the collision rate per driver should actually fall somewhat. And there is reason to hope it will fall faster than projected here, due to the continuing development of safer vehicles, roads, and drivers.

The traffic collision projections presented here are based only on the 2012-2014 averages (as reported by MPI) and the latest MBS population projections by age and gender.

	2012-14 Average	2015 Estimate	PROJECTION 2020	2025	2030	2035	240	2045
Manitoba 16+ Population	1,027,311	1,054,420	1,118,795	1,190,176	1,262,308	1,336,905	1,411,077	1,482,569
Licensed Drivers	854,504	877,195	931,032	989,332	1,048,297	1,110,217	1,171,875	1,231,789
Total Collisions	40,488	41,458	43,606	46,069	48,611	51,436	54,268	56,993
Collisions/10,000 Drivers	473.8	472.6	468.4	465.7	463.7	463.3	463.1	462.7
Fatal Collisions	74	76	80	84	89	94	99	104
Injury Collisions	8,677	8,885	9,346	9,874	10,418	11,024	11,631	12,215
Property Damage Only	31,736	32,497	34,181	36,112	38,104	40,318	42,538	44,674
Total Fatalities	83	85	89	94	100	105	111	117
Total Serious Injuries	310	317	334	353	372	394	416	436
Total Victims	11,129	11,395	11,986	12,663	13,362	14,138	14,916	15,665

License and Collision Statistics derived from MPI Collision Statistics Reports

	PROJECTED % CHANGE FROM 2015 2020	2025	2030	2035	240	2045
Manitoba 16+ Population	6.1%	12.9%	19.7%	26.8%	33.8%	40.6%
Licensed Drivers	6.1%	12.8%	19.5%	26.6%	33.6%	40.4%
Total Collisions	5.2%	11.1%	17.3%	24.1%	30.9%	37.5%
Collisions/10,000 Drivers	-0.9%	-1.5%	-1.9%	-2.0%	-2.0%	-2.1%

Total collisions are estimated to climb from the 2012-14 average of about 40,500 to 57,000 in 2045; a 40.8% increase in total collisions. MPI records collisions in terms of severity as follows:

Fatal Collision: At least one person is killed as a result of the collision, including any deaths that occur within thirty days, but excluding deaths from suicide or a medical condition.

Injury Collision: At least one person sustains some level of non-fatal personal injury.

Property Damage Only (PDO) Collision: No injuries occur; only property damage.

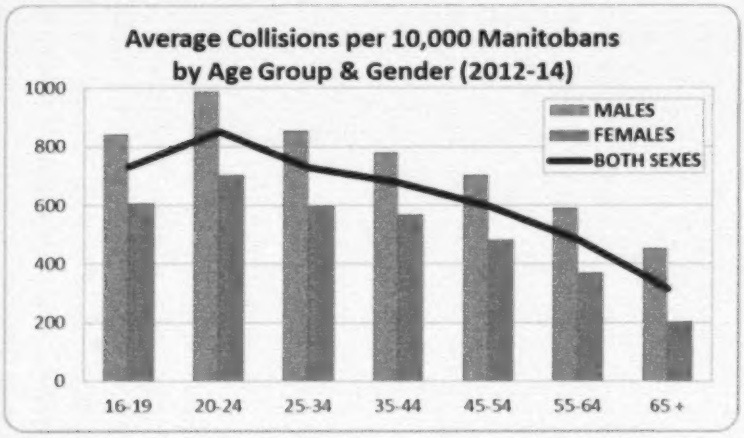
In the MBS projections, the number of Fatal Collisions, Injury Collisions, and PDO Collisions are kept in the same proportions as reported by MPI for 2012-14.

Fatalities are assumed to occur in 0.2% of collisions (about 2 out of every 1,000 collisions). Injuries occur in about 1 in 5 collisions (21.4%), and there are about 120 injury collisions for every fatal collision. The vast majority of collisions (78.4%) are non-injurious and result only in property damage.

A fatal collision can have more than one fatality, and any number of injured. The average number of fatal collisions over 2012-14 was 74, which resulted in 83 deaths. Using the same ratio, the 104 fatal collisions projected for 2045 would produce 117 traffic fatalities that year.

Taking fatal and injury collisions together, MPI reported 11,129 total victims (2012-14 average), of which 310 were seriously injured and 83 killed. For 2045, the projection is 15,665 total victims, with 436 seriously injured and 117 deaths.

While total collisions is an important statistic, collision rate by gender and age group reveals which groups are more likely to be involved in collisions.



For every age group, females have a consistently lower collision rate than males. As a rule, drivers involved in a collision are about 60% male and 40% female.

The female proportion softens a bit with age. Drivers in collisions in the 55-64 age group are 38% female and 62% male, and for ages 65+ its 36% female and 64% male.

With the general aging of the population, and the greater life expectancy of females, the proportion of collisions with female drivers aged 65 and over (vs. males in this age group) is projected to fall from 36% today to 33% before the end of the projection period (unless perhaps they drive more than today's older women).

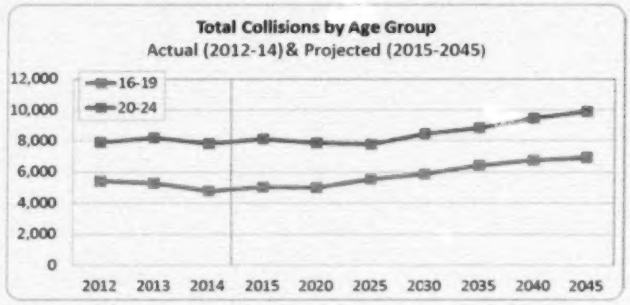
The chart also shows the youngest age groups to have the highest collision rates. The highest collision rate is for young men aged 20-24, with an average of 990 per 10,000 in this age group involved in a collision each year.

In explanation for the trends shown, the 20-24 age group is more likely to be licensed than those under 20 (and also more likely to have their own vehicles, and to be driving more). After the 20-24 group, each successive group has a lower incidence of collisions. This is due to both gaining driving experience, and eventually for driving less and even giving up one's license.

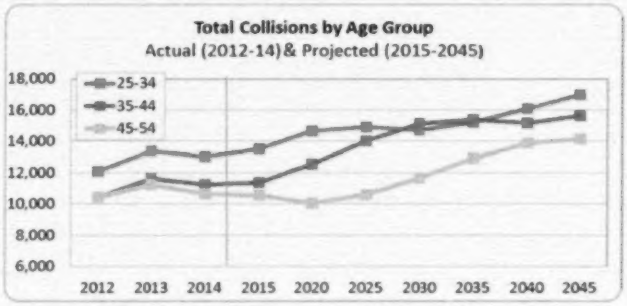
The following series of charts present total collisions by age group, which are expected to be 0.2% Fatal Collisions, 21.4% Injury Collisions, and 78.4% Property Damage Only Collisions.

Information presented in these charts cannot be summed to arrive at the total collision figures provided earlier, as collisions can involve one, two, or more drivers of any age. However, the slopes of the lines for all three charts can be meaningfully compared because the range covered by the vertical axis is the same (i.e., 12,000).

Collision involvement essentially mirrors the projected population growth of each age group (as the collision rate for each age group is assumed to be constant).

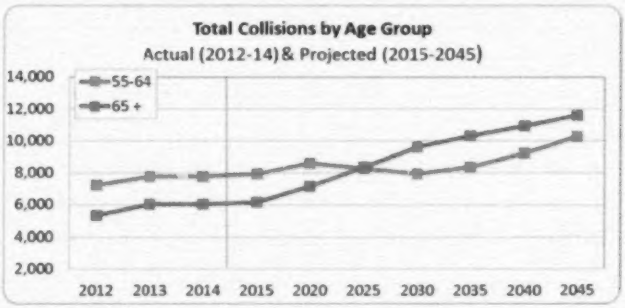


For example, total collisions for the 16-19 age group are projected to grow from 5,050 in 2015, to 6,930 in 2045 (37.3% in total). The 15-19 population (following a 1.3% decline between 2015 and 2020) grows 37.5% between 2015 and 2045.



The 20-24 age group follows a similar path, although this population declines over the first ten years of the projection period, finally recovering to 21.8% total growth by 2045; with corresponding 21.9% growth in projected collisions between 2015 and 2045.

The next three age groups are shown to have considerably more collisions each year, but this is because they are ten-year age groupings (hence about twice the number of collisions). Again, collisions are projected to grow in step with population.



For all age groups, except 65+, growth in total collisions (and total population) from 2015 to 2045 is between 21% and 38%. There's something different however with the 65+ age group. For the 65+ age group, the population grows 84.2% between 2015 and 2045, and total collisions grows even more (88.4%).

In 2015 there are about 30,000 more people aged 65+ than 55-64, but by 2045 there are almost 150,000 more people 65+ than 55-64. As a result, for 2025 onward, the 65+ group as a whole is projected to have more traffic collisions than those aged 55-64.